

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/012234 A1

(51) International Patent Classification⁷: **C07C 255/41**,
255/38, 255/32, C07D 213/71, A61P 35/00, A61K 32/77,
31/4402

(74) Agent: **SMART & BIGGAR**; Attn: KANG, Yoon (Ms.),
438 University Avenue, Suite 1500, Box 111, Toronto, Ont-
ario M5G 2K8 (CA).

(21) International Application Number:
PCT/CA2004/001431

(22) International Filing Date: 30 July 2004 (30.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/491,109 30 July 2003 (30.07.2003) US

(71) Applicant (for all designated States except US): **THE
HOSPITAL FOR SICK CHILDREN [CA/CA]**; 555
University Avenue, Suite 5270, Toronto, Ontario M5G
1X8 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ROIFMAN, Chaim**,
M. [CA/CA]; 33 Christine Crescent, North York, Ontario
M2R 1A4 (CA). **DEMIN, Peter** [CA/CA]; 40 High Park
Avenue, Apt. 414, Toronto, Ontario M6P 2S1 (CA).
ROUNOVA, Olga [RU/CA]; 40 High Park Avenue, Apt.
414, Toronto, Ontario M6P 2S1 (CA). **GRUNBERGER**,
Thomas [CA/CA]; 63 Robingrove Road, Toronto, Ont-
ario M2R 3A1 (CA). **CIMPEAN, Octavian, Laurand**
[CA/CA]; 45 Macauley Drive, Thornhill, Ontario L3T 5S6
(CA).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

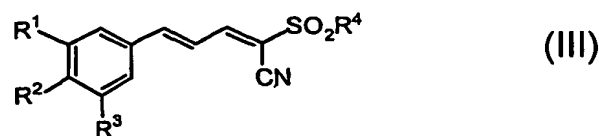
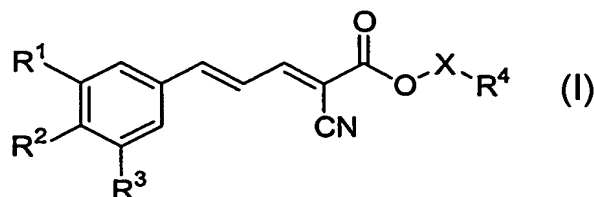
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: COMPOUNDS FOR MODULATING CELL PROLIFERATION



(57) Abstract: Compounds having the Formula (I) or (III)
wherein R¹, R² and R³ are each independently selected
from H, OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-(C₁₋₆alkyl),
N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, NO₂, CF₃, OCF₃, and
halo; R⁴ is unsubstituted Ar or Ar substituted with 1-4 substituents
independently selected from C₁₋₆alkyl, C₁₋₆alkoxy and halo; X is
selected from (CH₂CH₂O)_n and (CH)_n, and n = 1-4, salts, solvates
and hydrates thereof, useful for modulating or inhibiting cell
proliferation, are described.